

## Draft Diesel Risk Reduction Plan

Randy Pasek, Ph.D.

July 13, 2000

California Environmental Protection Agency



Air Resources Board

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## Board's Action

- August 1998 Board listed "particulate emissions from diesel-fueled engines" as a toxic air contaminant
- Directed staff to begin risk management process
  - ◆ Developed Diesel Risk Reduction Plan

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## Risk Management Process

- Introduce Draft Plan for Public Review Today
- Diesel Advisory Committee/ Public Meeting  
August 11, 2000
- Final Plan Considered by Board September 28, 2000
- Identified Measures Developed through Public Rulemaking Process over next 5 years

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## Draft Diesel Risk Reduction Plan

- Identifies Categories of Engines
- Estimates Emissions
- Characterizes Ambient and Near-Source Risks
- Identifies Available Control Options
- Recommends Measures for Regulatory Development and Estimates Risk Reduction

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## Diesel-Fueled Engine

- Any Internal Combustion, Compression Ignition (Diesel Cycle) Engine
- May Include Fuels Other than Diesel (i.e. Jet Fuel, Biodiesel, Diesel/Water Mixtures)
- Turbines are Not Included

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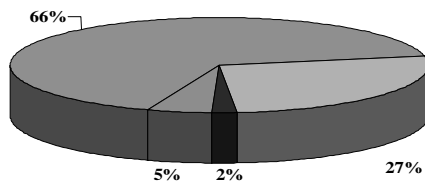
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## Diesel PM Emissions For 2000 (26,700 Total Tons/Year)



■ Off-Road (66% of Total) ■ On-Road (27%)  
■ Stationary Engines (2%) ■ Portable (5%)

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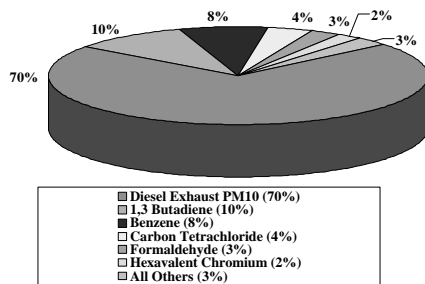
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## Percent of Statewide Average Potential Ambient Cancer Risks for 2000




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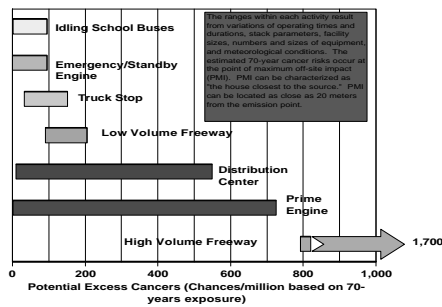
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## Estimated Near-Source Risk Range for Diesel-Related Activities




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## Conclusions From Inventory/Risk Analyses

- Diesel-Fueled Engines are the most Significant Source of Air Toxics in California
- Existing Regulations have Significantly Reduced PM Emissions from Diesel-Fueled Engines, but More Reductions are Feasible and are Needed
- Need to Examine All Categories and Uses of Diesel-Fueled Engines

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## Emission Reduction Approaches

- Reduce Emissions from New Mobile and Stationary Engines by 90%
- Require Retrofit of Existing Engines
- Provide Low Sulfur Fuel (<15ppm) to Enable Technology

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## Catalyst-Based Diesel Particulate Filters

- High Control Efficiency
- Successfully used on 1000's of Diesel Engines

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## Catalyst-Based DPF Costs

- Current Costs Range from \$10-\$50 per HP Depending on Engine Category
- Expect Cost to be Significantly Lower in Future
- A more Refined Analysis will Occur as Regulations are Developed.

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### Mobile Source Strategies

(Implementation Dates in Parentheses)

- More Stringent Emission Standards for New On- and Off-Road Engines (2006-2008)
- Retrofit Existing On- and Off-Road Engines (2001-2008)
- Establish in-use Compliance Program (2005-2008)
- Non-Regulatory Programs
  - ◆ Voluntary Control and Incentive Programs

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### Stationary Source Strategies

(Implementation Dates in Parentheses)

- New Engine Standards (2002)
- Prime Engine Retrofit (2003)
- Higher Emitting Emergency Standby Engine Retrofits (2003)
- Portable Engine Retrofits (2004-2005)
- Agricultural Engine Retrofits (2004-2005)

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### Fuel Strategies

(Implementation Dates in Parentheses)

- All California Diesel  $\leq$  15 PPM Sulfur Content (2005-2006)
  - ◆ Some Amounts Available Earlier
- Guidance for Diesel Fuel Options (e.g. Fuel/Water Emulsions) (2001)

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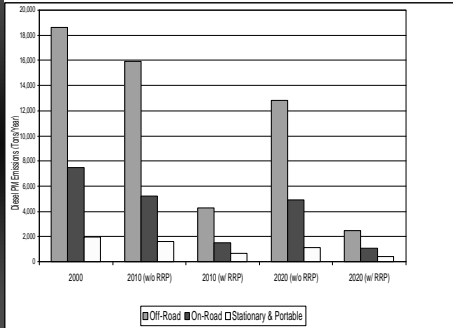
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## Proposed Plan will Significantly Reduce Diesel PM Emissions




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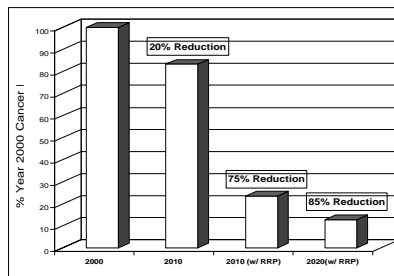
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## Plan Reduces Risk by 75% and 85% in Years 2010 and 2020




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## NEXT STEPS

- Release Draft Plan for Comments (July 13)
- Technical Appendices Released by (July 27)
- Advisory/Public Meeting (August 11)
- Written Comments Due 30 Days After Appendices are Released (August 25)
- Final Draft Out for Review (September 8)
- ARB Board Meeting (September 28)
- Interested Parties Invited to Meet with ARB Staff (Ongoing)

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## After Board Meeting

- ARB Staff will begin Development of Regulations and ATCMs with Full Public Involvement
- Public Workshops to Solicit Input
- Draft Regulations Released for Public Review and Comment
- Final Draft Regulations Presented to the Board for Approval
- Individual Measures Developed over next several years

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